SUPPLEMENTARY INFORMATION

Photoinduced photosensitizer-antibody conjugates kill HIV Env-expressing cells also inactivating HIV

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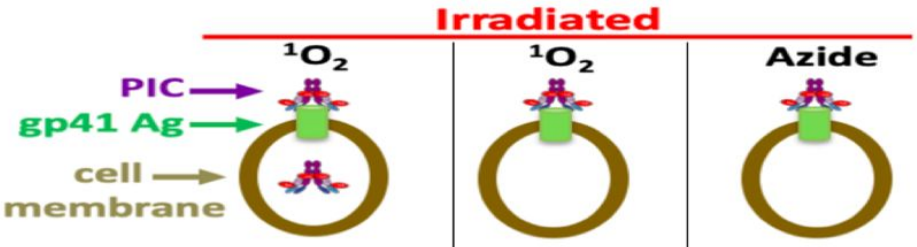
Supplementary Results

a



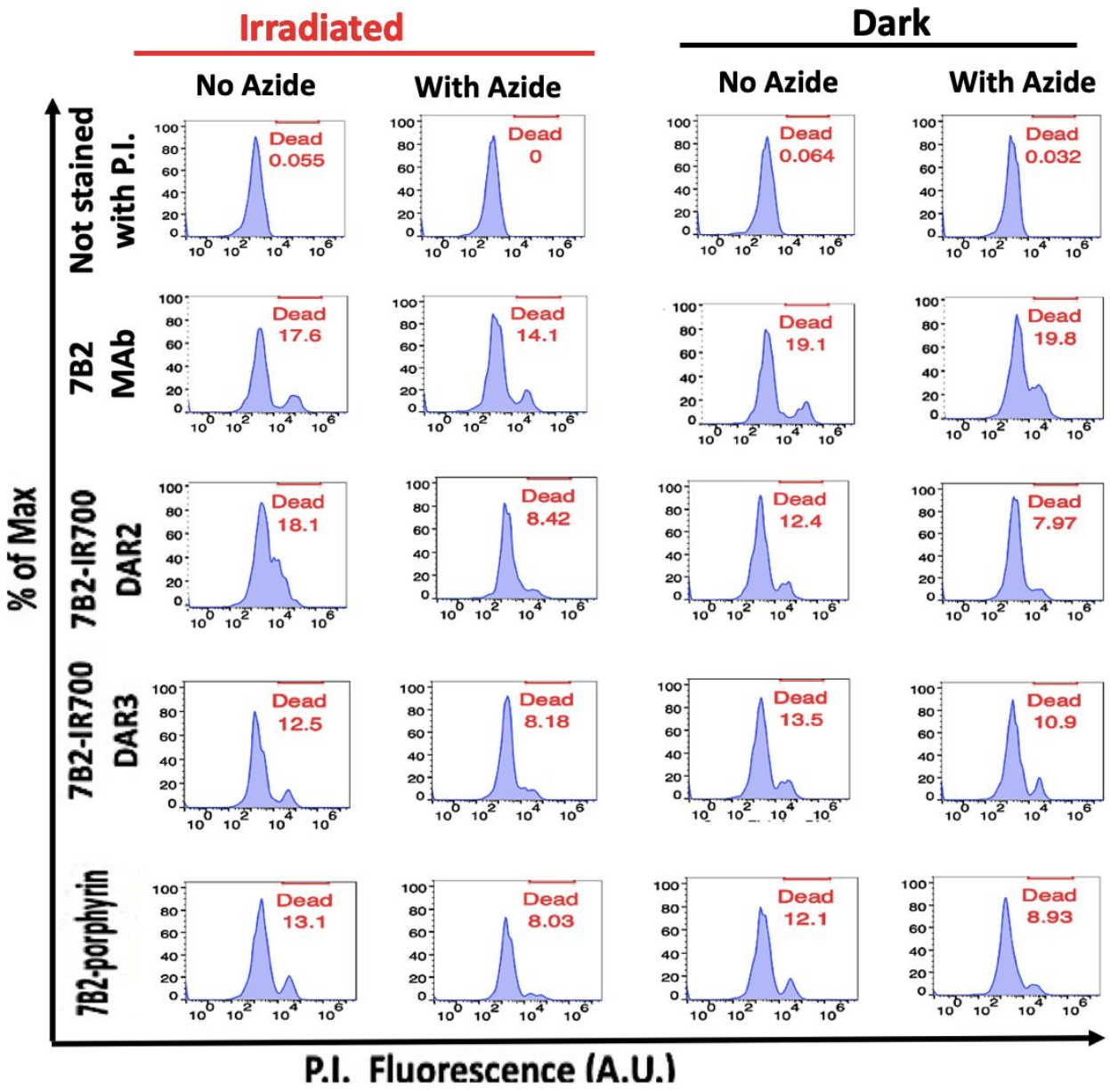
		Model 1	Model 2	Model 3
PIC Localization	On membrane	Yes	Yes	Yes
	Internalized	Yes	No	No

b

Model 1	Model 2	Model 3
Cell incubation in DMEM	Cell incubation in PBA	Cell incubation in PBA
PIC incubation in DMEM	PIC incubation in PBA	PIC incubation in PBA
Washing the cells with DMEM	Washing the cells with DMEM	Washing the cells with PBA
Irradiation in DMEM without phenol red	Irradiation in DMEM without phenol red	Irradiation in PBA

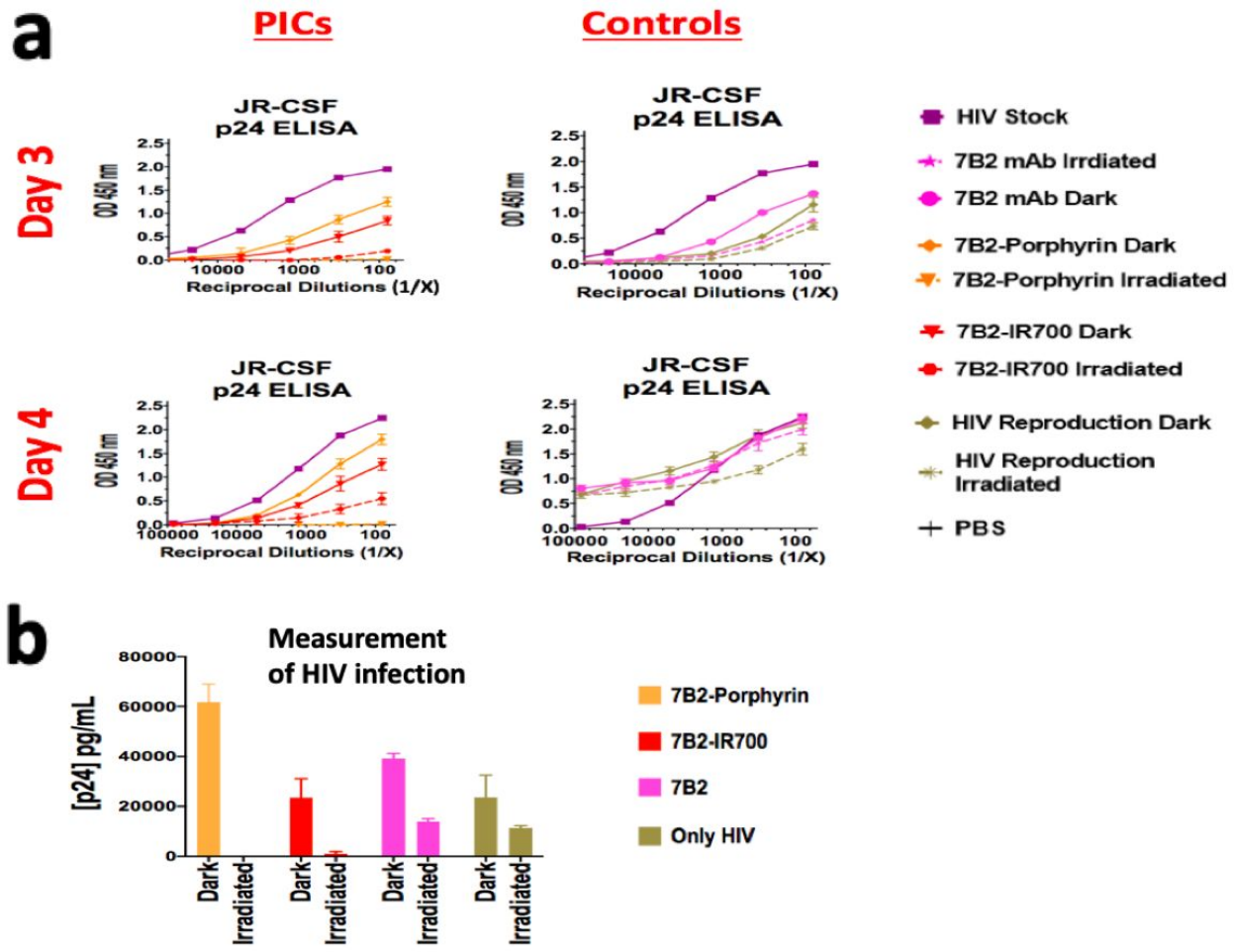
Supplemental Figure S1. (a) Schematic pictures and table depict the process of preparing PIT-treated cells in three models, based on the PIC-localization. **(b)** The table depicts the procedure of PIC incubation during PIT treatment. From left to right; **Model 1)** for PIC-internalized model, the Env-transfected 293T cells were incubated with PICs in DMEM media (No azide), after washing were irradiated in DMEM media without phenol red (No azide). **Model 2)** cells incubated in PBS/1% BSA/0.01% sodium azide (PBA), to inhibit PIC internalization, then incubated with PIC in PBA for 1 h. Cells were washed to remove unbound PICs and azide, instantly irradiated in DMEM without phenol red (No azide). **Model 3)** the protocol was followed

the same as model 2, but the irradiation was done in PBA containing azide as a $^1O_2$ quencher. Before flow cytometry study, cells were stained with propidium iodide (PI). All PIT treatments on transfected cells were in the presence of 5 µg/mL soluble CD4



Supplemental Figure S2. Study the phototoxicity of PICs on 293T control cells not expressing gp41. Flow cytometric diagrams demonstrated the percentage of cell death treated with 7B2 MAb or PICs. The irradiation was applied in the presence or absence of sodium azide as a $^1O_2$

quencher. The controls include the cells in darkness, unstained cells, the cells incubated with naked 7B2 antibody. No cell death was observed on 293T control cells treated by PICs.



Supplemental Figure S3. Effect of PICs on HIV-1 strain JR-CSF virus. The virus stock was incubated with 500 nM of PICs, naked 7B2 antibody, and not-treated samples (only HIV). After irradiation, the C8166-R5 cells were infected with viruses. The supernatant was collected daily for p24 ELISA. The viral loads were measured as optical density at 450 nm for day 3 and day 4 (**a**), then calculated based on p24 (**b**). Dark and irradiated samples are represented with line and dot-line, respectively (**a**). The error bar is the SEM of three wells replicates for the supernatant of day 3 and day 4.